
Goddard

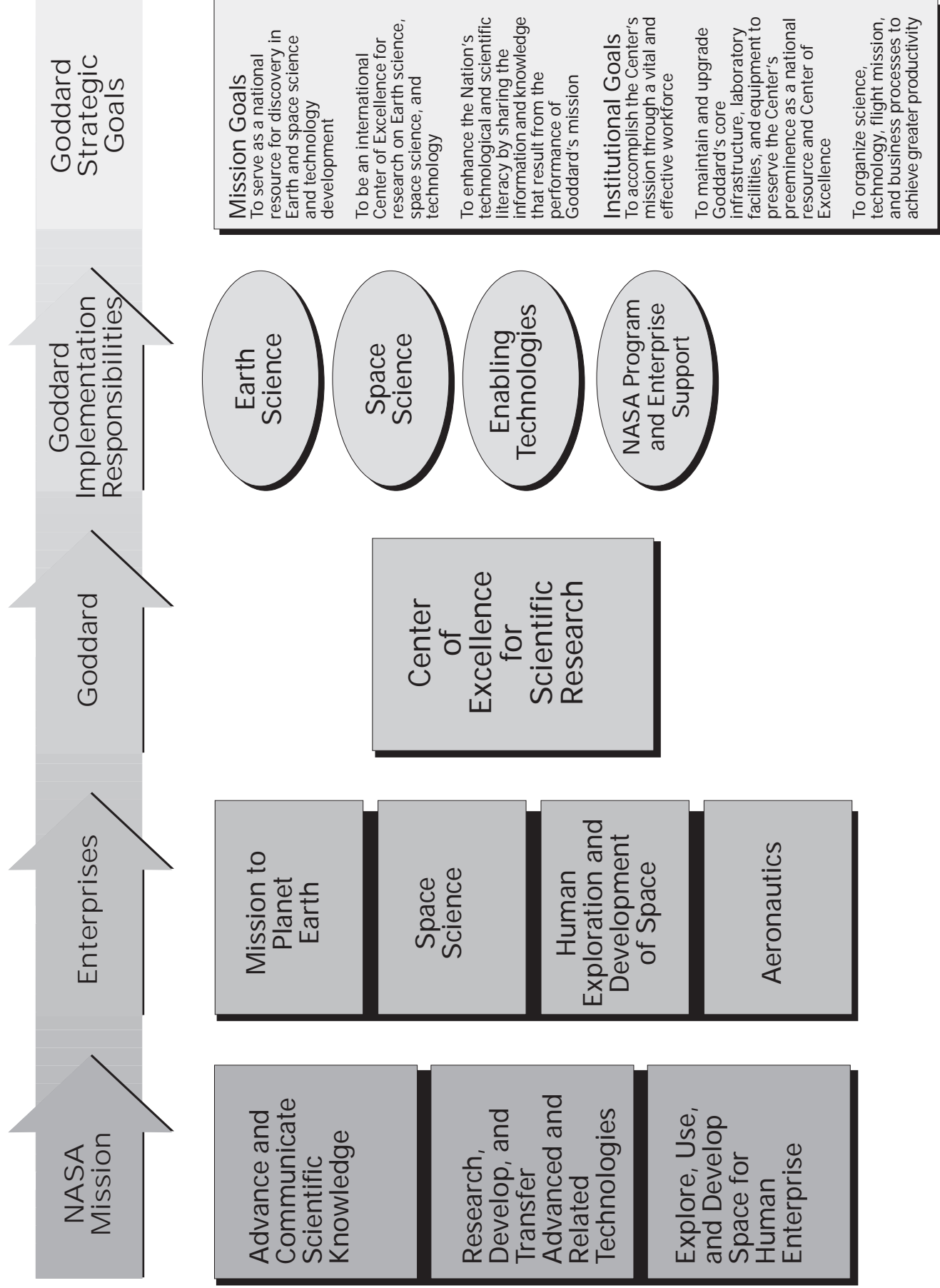
Space Flight Center

Implementing NASA's

Strategies for the 21st

Century





Note from the Director:

Over the past 35 years, the Goddard Space Flight Center has established an outstanding tradition of excellence in science and technology. This excellence has been demonstrated through a wide range of recent scientific discoveries and technological advancements: first mapping of the Antarctic ozone hole (Nimbus-7); understanding how the Earth works as an integrated system (METSAT); determining the very early structure of the universe (COBE); imaging the birthplaces and death struggles of stars like our Sun (HST); and developing and applying advanced laser altimetry to planetary science (Mars Global Surveyor), as well as Earth science (EOS-laser altimeter). Excellence is also exemplified by the engineering, technology, management, and business activities that contributed to these and other missions.

Goddard's commitment to providing leadership in conducting science from space has not changed, but our strategies must change for Goddard to thrive in a resource-limited environment. We must be innovative in all that we do, and we must capitalize on new technologies. To advance Goddard's tradition of excellence, we must change the way we do work by learning to do more with less, by leveraging our efforts with partners, and by transferring the technology that we develop to other users. Ultimately, these changes will allow the Nation to achieve more world-class science at lower cost and will establish Goddard's leadership role in this new environment.

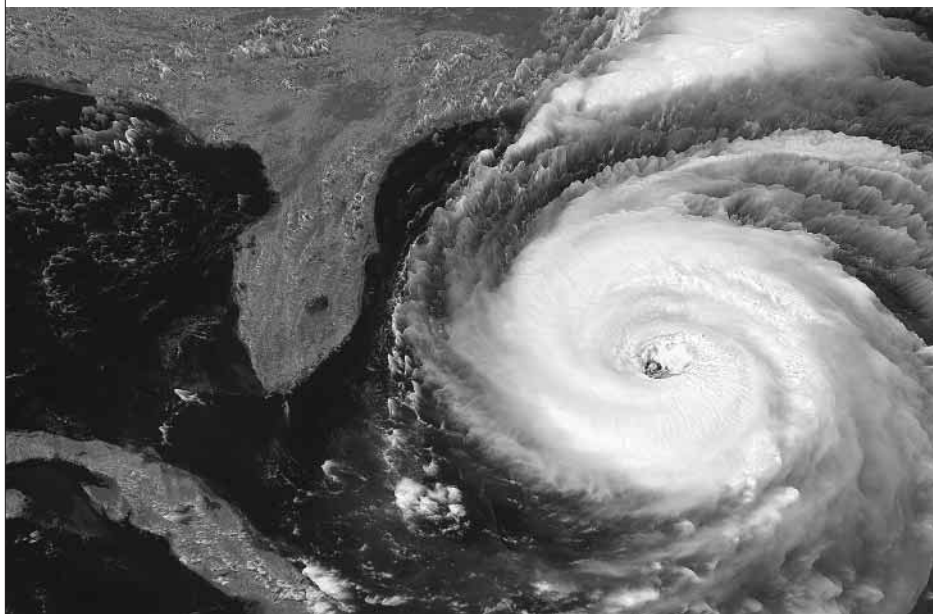
Early in 1996, we initiated a planning process to provide a framework for decisions and actions. This process follows the NASA Strategic Plan and Space Science and Mission to Planet Earth Enterprise Strategic

Plans. It involved all Center organizations and solicited continuous feedback through the use of the World Wide Web, open houses, and staff briefings. This plan is the result of that process.

The Goddard Strategic Implementation Plan provides a framework for the future direction of the Center. However, it is just the beginning of the changes needed if Goddard is to achieve its vision. We have already begun more detailed planning to develop and implement these strategies. We will regularly revisit this plan to track our progress toward achieving our mission. This Implementation Plan is presented with the conviction that we can sustain and build on the Goddard tradition of excellence only through the continued creativity, dedication, and integrity of every member of the Goddard team. As we move into the next steps, I challenge each of you to take an active role in determining how to make the Center's vision a reality.



Joseph H. Rothenberg
Center Director





Highlights of the Goddard Strategic Implementation Plan

The Plan establishes a new emphasis for the Center by focusing on our central role of enabling scientific discovery by

serving as a national resource and providing information, expertise, problem solving, and research support to outside scientists and technologists;

being a Center of Excellence where we perform world-class scientific and technical research; and

developing partnerships to use the best available capabilities to achieve NASA's strategic goals.

The Plan creates a challenging vision for Goddard's future mission by

identifying values that are central to achieving our vision; and

advancing the Center's tradition of excellence.

The Plan takes a strategic approach to Goddard's operations by

committing the Center to three distinct areas of responsibility: Earth science, space science, and technology;

establishing criteria for all the work the Center performs; and

using performance measures to make meaningful, quantitative assessments of the Center's progress.

The Plan guides Goddard's implementation of these strategies by

incorporating strategic thinking into all our management practices;

allocating resources according to the strategic directions;

aligning work processes to achieve performance goals; and

fostering innovation at every level of the organization.

Vision:

Shared image of the organization's future.

We revolutionize knowledge of the Earth and the universe through scientific discovery from space to enhance life on Earth.

Mission:

Why Goddard exists: what we do, who our primary customers are, and the principal strategies by which we will operate.

Goddard Space Flight Center enables discovery through leadership in Earth and space science.

We serve the scientific community, inspire the Nation, foster education, and stimulate economic growth.

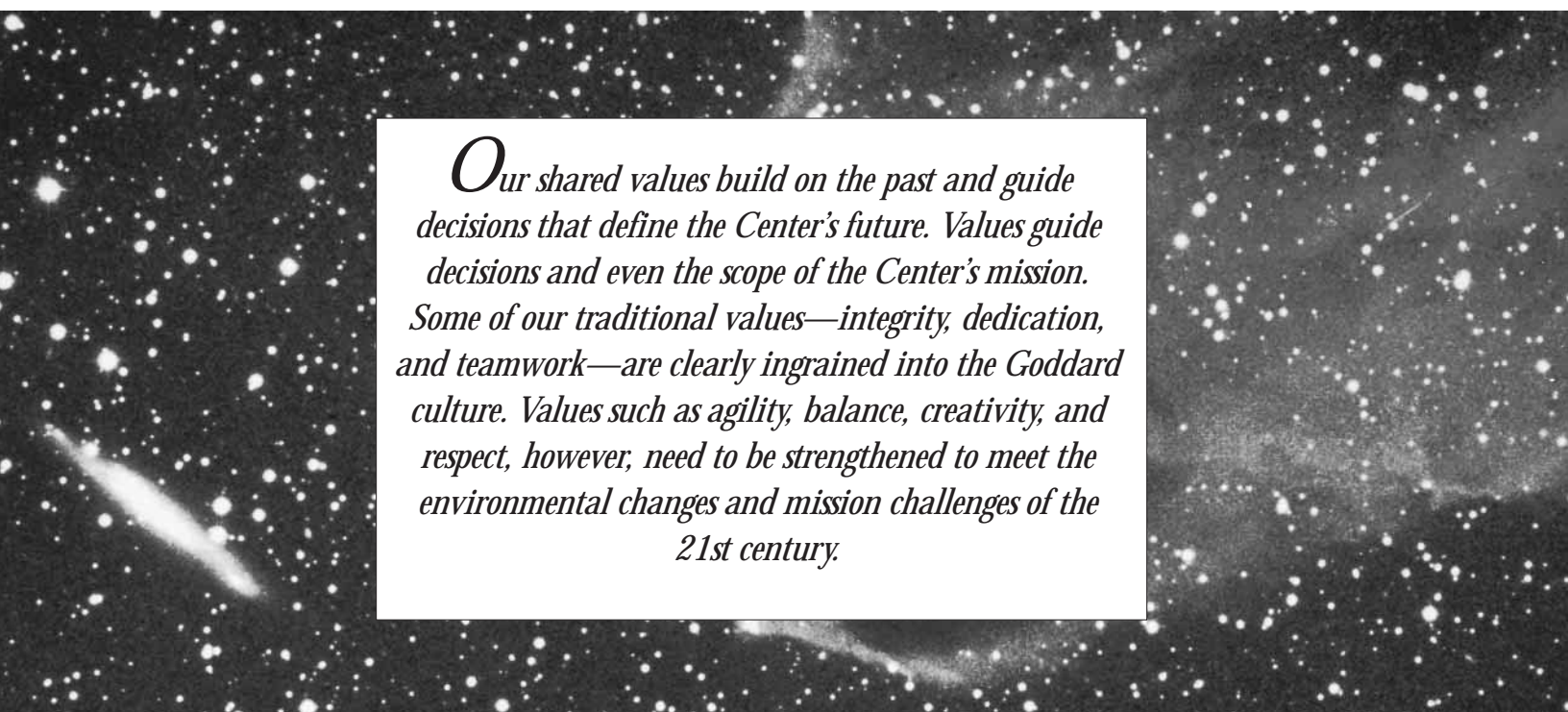
We partner with others to achieve NASA's goals.

We create technologies that support and advance these endeavors to take full advantage of doing research in space.

We accomplish this through innovation in all that we do.

Values:

The guiding principles that determine the culture, set the context in which decisions are made, and are the standards for our actions.



Our shared values build on the past and guide decisions that define the Center's future. Values guide decisions and even the scope of the Center's mission. Some of our traditional values—integrity, dedication, and teamwork—are clearly ingrained into the Goddard culture. Values such as agility, balance, creativity, and respect, however, need to be strengthened to meet the environmental changes and mission challenges of the 21st century.

Goddard's Values:

Agility

Anticipating the future, leading change, and adapting quickly are crucial to thriving in a dynamic environment.

Balance

An employee's work life and personal life, including health, family, community involvement, and other interests, contribute to the vitality both of the individual and of the Center.

Creativity

Freedom to explore new ideas stimulates discovery, fosters innovation, and leads to more effective ways of doing work.

Dedication

Successful results require a commitment to excellence and to individual and team responsibilities.

Integrity

Trust, fairness, honesty, and accountability for our actions are the cornerstones of personal and organizational integrity.

Respect

Diversity among people and their ideas is an inherent strength as we work toward fulfilling Goddard's mission.

Teamwork

Accomplishments result from successful teams, both internal and external to the Center, that capitalize on the strengths and contributions of every team member.

Areas of Responsibility

Goddard's overall mission falls into three major areas of responsibility:



Earth Science

Goddard Space Flight Center plays a major role in the new interdisciplinary field of Earth System Science by providing programmatic leadership for NASA's Mission to Planet Earth.

In the coming years, Goddard will work with our partners to identify and develop the technology needs for advanced Earth science sensors, faster and at less cost.

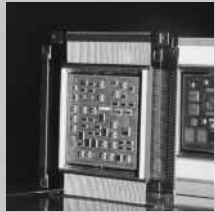
Research in this area will advance understanding of the Earth as an environmental system by determining how its components have developed, how they function, how they interact with one another, and how they evolve on various time scales. This will enable Earth scientists to quantify the practical impacts that both natural and human activities will have on the Earth's resources during the next decade and over the next century.



Space Science

Goddard is dedicated to leading the space science community in space-based physics and astronomy and to creating opportunities for conducting research through a broad variety of flight opportunities. We promote the development of advanced technology designed to enhance scientific capabilities at an affordable cost.

In collaboration with our partners worldwide, Goddard will continue to seek answers about how the universe formed, what it is made of, how its components interact, and how it evolves. The Center also will contribute to the quest to learn how stars and their planetary systems form and evolve. We will continue to take part in determining the nature of the Sun's interaction with its surroundings. Similarly, we will work with others to discover the properties of interplanetary space as well as the plasma environments of the planets.



Technology

Goddard is committed to the development and infusion of cutting-edge technology to increase mission performance and capabilities while reducing the costs of performing scientific measurements from space. The Center provides Agency leadership to advance next-generation spacecraft, sensor, and instrument technology. This leadership will result in advanced Earth-observing satellites and space science missions at reduced costs.

By creating and maintaining synergy among the science, engineering, and project management disciplines, the Center will ensure the maximum return on its technology investment.

Goddard plans and coordinates technological research and development both within the Center and with external partners and serves as a catalyst for forming teams among academic, Government, and commercial concerns to draw on the best capabilities of each in developing new technologies. We also transfer the technology that is developed to the private sector to strengthen the national economy.

Goddard has responsibilities in other areas as well.

Support for Other NASA Programs and Enterprises

The Center supports NASA programs and Enterprises in a number of areas. For example, we provide space communications support for the Shuttle Program, ground communications and launch range support for all NASA missions, and assist NASA Headquarters with various business functions.

The Center's overall goals guide Goddard in setting priorities, measuring progress, and performing our overall mission.

Program Goals and Strategies

*We have established **six Centerwide goals** to guide Goddard in fulfilling its mission and responsibilities as assigned by NASA over the next 5 years. **Strategies** determine “how” we will go about meeting each goal.*

Goal 1 To serve as a national resource for discovery in Earth and space science and technology development.

Strategy 1:

Provide customer-centered leadership to implement the goals of NASA's Space Science and Mission to Planet Earth Enterprises.

Strategy 2:

In support of the Nation's science and technology goals, use the Center's capabilities for roles it is uniquely able to perform as a Federal laboratory.

Goal 2 To be an international Center of Excellence for research in Earth science, space science, and technology.

Strategy 1:

Create and sustain a creative, outward-focused environment that encourages the interchange of ideas.

Strategy 2:

Ensure that the Center has the resources, experience, competence, and capabilities to perform world-class science, technology development, and engineering in its core areas of responsibility.

Strategy 3:

Use the Center's expertise in program leadership and project management to set the benchmarks for mission, schedule, and cost performance in meeting customer requirements.

Goal 3 To enhance the Nation's technological and scientific literacy by sharing the information and knowledge that result from the performance of Goddard's mission.

Strategy 1:

Use the full scope of the Center's capabilities to communicate the content, relevance, and excitement of scientific and technical knowledge and discovery to the education community and to the public at large.

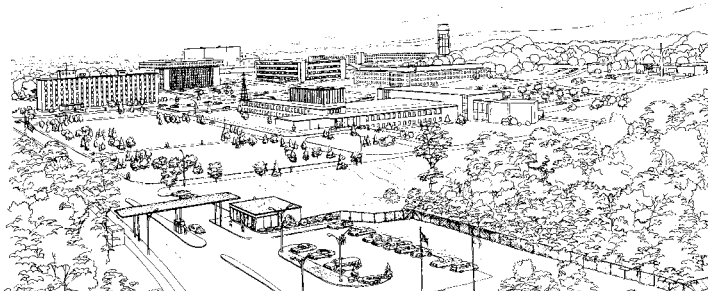
Strategy 2:

Working within NASA's Education Strategic Plan, address the needs of the education community by translating the Center's science, engineering, mathematics, and technology knowledge for use with the national education standards for curriculum support, faculty enhancement, student support, and technology applications.

Strategy 3:

Explain the nature and convey the excitement and relevance of NASA's mission and Goddard's contributions to scientific discoveries and technology developments to the public in a manner appropriate to each audience segment.

Institutional Goals and Strategies



Goal 4 To accomplish the Center's mission through a vital and effective workforce.

Strategy 1:

Ensure that all employees understand Goddard's values, their individual roles and contributions in achieving the Center's goals, and how their work fits into NASA's overall mission.

Strategy 2:

Involve employees in the creation of a work environment conducive to their best performance according to the Center's values and goals.

Strategy 3:

Acquire and sustain a vital and effective workforce.

Goal 5 To maintain and upgrade Goddard's core infrastructure, laboratory facilities, and equipment to preserve the Center's pre-eminence as a national resource and Center of Excellence.

Strategy 1:

Focus facility resources on those capabilities that contribute the most toward meeting Goddard's goals as a national resource and Center of Excellence.

Strategy 2:

Maximize productivity by making sure employees have the tools and equipment they need to do their best work.

Goal 6 To organize science, technology, flight mission, and business processes to achieve greater productivity.

Strategy 1:

Create an effective organization for carrying out the Center's science and technology mission.

Strategy 2:

Systematically improve the Center's work processes.

Strategy 3:

Create a management and full-cost information structure to facilitate strategic management of programs, processes, and resources.

Criteria for Goddard Work

Ongoing work and new initiatives at Goddard Space Flight Center should all be aligned with the Center's mission.

These questions provide guidance for determining new Center initiatives and for determining the scope of existing work.

Relevance

- Is this work in alignment with the NASA Strategic Plan and the Enterprises that the Center supports?
- Does this work help achieve the vision and the mission of the Center?
- Is this work included in one of the Center's areas of responsibility?
- Does the work maintain the appropriate balance between near-term goals (up to 10 years) and the work necessary to meet the grand scientific challenges that are a decade or more in the future?

Center Capabilities

- Does the Center offer a unique capability to support this work and to deliver the required product, and is there no other source from which to obtain it?
- Does Goddard have a leadership role in this kind of work, and are there few outside sources that can support it?
- Is it the kind of high-risk, state-of-the-art work the Center should be pursuing?
- Does the capability to do the work position the Center to obtain future work in alignment with Goddard's mission and this Implementation Plan?

Resources

- Are resources — for example, space, personnel, facilities, and equipment — available within Goddard or with partners to perform this work in a cost-effective manner?
- Is the new work the most cost-effective option for accomplishing a goal within schedule and with a high probability of success?
- Will the new work fully pay for itself?
- Will partnerships or other funding options reduce NASA's funding requirements?

Assignment

- Has this work been assigned to Goddard by the Agency?

Implementation Plan: Program Goals

Goal 1 To serve as a national resource for discovery in Earth and space science and technology development.

Strategy 1:

Provide customer-centered leadership to implement the goals of NASA's Space Science and Mission to Planet Earth Enterprises.

Objective:

To work in partnership with NASA Headquarters and the scientific community to define the goals and essential measurements for addressing the next generation of Earth and space science questions.

Objective:

To establish partnerships with industry, academia, and the international scientific community in order to concentrate the best available resources on doing the science and developing the technology that will lead to new discoveries.

Objective:

To make data and new knowledge widely accessible to the scientific community.

Strategy 2:

In support of the Nation's science and technology goals, use the Center's capabilities for roles it is uniquely able to perform as a Federal laboratory.

Objective:

To provide increased opportunities for scientists to make new measurements by increasing flight opportunities across a wide range of instrument platforms.

Objective:

To perform the long-term scientific and technological research that makes breakthrough discoveries possible.

Objective:

To provide access to the Center's institutional capabilities, including facilities, equipment, and expertise in science, technology, and project management in order to support and build the abilities of the scientific and supporting technical communities.

Objective:

To transfer new knowledge and technology to industry.

Performance Measures:

Breakthrough discoveries made by partners or resulting from Goddard data sources.

Number of flights and flight opportunities in which partners directly participate.

Percentage of Center resources dedicated to long-lead-time research and technology.

Number of resident visiting scientists, engineers, and personnel exchanges.

Percentage of developed technologies transferred to industry.

Goal 2 To be an international Center of Excellence for research in Earth science, space science, and technology.

Strategy 1:

Create and sustain a creative, outward-focused environment that encourages the interchange of ideas.

Objective:

To establish value-added partnerships and collaborations in order to optimize capabilities to achieve the Center's mission.

Objective:

To systematically assess the quality and value of Goddard's contributions in research and leadership through customer, peer, and other external input and to use the results of these assessments to target areas for improvement.

Strategy 2:

Ensure that the Center has the resources, experience, competence, and capabilities to perform world-class science, technology development, and engineering in its core areas of responsibility.

Objective:

To assemble and sustain the best possible workforce of scientists, engineers, and technologists.

Objective:

To provide the state-of-the-art facilities and equipment it takes to perform cutting-edge research.

Objective:

To advance the Center's research capabilities through challenging, hands-on work.

Strategy 3:

Use the Center's expertise in program leadership and project management to set the benchmarks for mission, schedule, and cost performance in meeting customer requirements.

Objective:

To perform cutting-edge research and development of instruments, spacecraft, ground-support technologies, and information management systems to conduct science missions with increased performance at reduced cost.

Objective:

To accept the responsibilities and risks of infusing cutting-edge technologies.

Objective:

To employ innovative practices in program and project management.

Performance Measures:

Scope of recognition of Goddard as a worldwide Center of Excellence for research in Earth science, space science, and technology.

Number of Goddard refereed publications and citations.

GSFC-developed technology infused in science missions.

Quality and type of new work the Center wins through competitions.

Decrease in the average cost per mission and cycle time and increase in instrument performance.

Goal 3 To enhance the Nation's technological and scientific literacy by sharing the information and knowledge that result from the performance of Goddard's mission.

Strategy 1:

Use the full scope of the Center's capabilities to communicate the content, relevance, and excitement of scientific and technical knowledge and discovery to the education community and to the public at large.

Objective:

To develop Center capabilities to communicate Goddard's mission activities and results.

Objective:

To provide employees with the guidance, resources, opportunities, and incentives to be active and effective in sharing knowledge and discoveries.

Objective:

To make specific education and public information initiatives part of each science and technology program.

Objective:

To create wide-ranging partnerships to broaden the scope of the Center's communication initiatives.

Strategy 2:

Working within NASA's Education Strategic Plan, address the needs of the education community by translating the Center's science, engineering, mathematics, and technology knowledge for use with the national education standards for curriculum support, faculty enhancement, student support, and technology applications.

Objective:

To work with external organizations and partners to develop educational programs and products that contribute to a systemic approach in meeting national education standards.

Objective:

To develop broad-based education programs aimed at raising scientific and technical understanding at all education levels.

Strategy 3:

Explain the nature and convey the excitement and relevance of NASA's mission and Goddard's contributions to scientific discoveries and technology developments to the public in a manner appropriate to each audience segment.

Objective:

To provide easy public and media access to mission information.

Objective:

To partner with others in the science and aerospace communities to develop a coherent picture of the role of science and technology in society today and in the future.

Performance Measures:

Percentage of employees participating in outreach activities.

Documented use and effectiveness of educational products and programs in school systems.

Number of opportunities for interaction with the media.

Institutional Goals

Goal 4 To accomplish the Center's mission through a vital and effective workforce.

Strategy 1:

Ensure that all employees understand Goddard's values, their individual roles and contributions in achieving the Center's goals, and how their work fits into NASA's overall mission.

Objective:

To communicate the purpose and content of this Plan to every employee.

Objective:

To involve every employee in developing work plans to fulfill the Center's mission.

Strategy 2:

Involve employees in the creation of a work environment conducive to their best performance according to the Center's values and goals.

Objective:

To foster an organizational climate where employee diversity and mutual respect are catalysts for creativity and team effectiveness.

Objective:

To align reward, recognition, and performance systems with the Center's values and goals.

Objective:

To provide both employees and managers work time and opportunities for appropriate training, improving work processes, and performing outreach activities.

Strategy 3:

Acquire and sustain a vital and effective workforce.

Objective:

To recruit the best employees, while maintaining balance in the experience levels of new hires and enhancing the Center's diversity.

Objective:

To make a commitment of management and resources to ensure that employees receive the training, developmental experiences, and tools they need to attain the highest levels of professional excellence and personal growth in order to perform the Center's mission.

Objective:

To create a climate that provides employees the opportunity to maintain a productive balance between personal and professional responsibilities.

Performance Measures:

The degree to which the Center's core technical capabilities are staffed with civil service expertise.

Positive changes in employee responses to key culture survey questions.

Percentage of goals met in the Center's and Directorates' diversity plans and the Center's Affirmative Action Plan.

The average amount of work time devoted to training, process improvement activities, and outreach.

Goal 5 To maintain and upgrade Goddard's core infrastructure, laboratory facilities, and equipment to preserve the Center's preeminence as a national resource and Center of Excellence.

Strategy 1:

Focus facility resources on those capabilities that contribute the most toward meeting Goddard's goals as a national resource and Center of Excellence.

Objective:

To define the facility requirements and acquire the resources needed to enhance Goddard's state-of-the-art capabilities.

Objective:

To reduce the Center's overall infrastructure costs by closing excess facilities or by converting them to other uses.

Objective:

To use external facilities when they have capabilities that are not currently available at Goddard or when they provide a cost-effective alternative.

Strategy 2:

Maximize productivity by making sure employees have the tools and equipment they need to do their best work.

Objective:

To budget for and acquire the necessary tools and equipment to improve productivity.

Objective:

To reduce costs and development time by using off-the-shelf products where appropriate.

Performance Measures:

Reduction of infrastructure costs.

The replacement of equipment before it becomes obsolete.

Availability of state-of-the-art equipment in core research areas.

Goal 6 To organize science, technology, flight mission, and business processes to achieve greater productivity.

Strategy 1:

Create an effective organization for carrying out the Center's science and technology mission.

Objective:

To eliminate non-value-added activities from functions and organizational units.

Strategy 2:

Systematically improve the Center's work processes.

Objective:

To identify, prioritize, and streamline the Center's core science, engineering, project management, and quality processes.

Objective:

To identify, prioritize, and streamline the Center's human resource and business processes.

Strategy 3:

Create a management and full-cost information structure to facilitate strategic management of programs, processes, and resources.

Objective:

To provide new business opportunities that provide high-quality work in Earth science, space science, and technology.

Objective:

To establish near- and long-term overhead targets for reducing infrastructure costs.

Objective:

To align and integrate operational, institutional, technical, and scientific activities with NASA planning and budget cycles.

Performance Measures:

Percentage of employees whose labor is a direct charge.

Productivity gains and costs saved as a result of improved processes.

Increased use of automation.

Reduction of paperwork for administrative processes.

Implementing Goddard's Mission

The aim of this planning process is to develop a guide for decisions and actions. The Plan is for allocating resources and making day-to-day decisions as well as major program decisions.

As the next steps are developed to carry out this Plan, each successive organizational level, each program, each work process, and each employee's work is drawn into view and the relationship to the Center's missions and goals is established.

The true test of success for this or any other plan is the degree to which it makes an impact on the ongoing behavior and actions of the organization.

Implementation is the key to making an impact.

During the course of the first year of this Plan: FY 97

- The Center organization will be restructured to better align with the responsibilities and goals of this Plan. (2nd–4th Quarter FY 97)
- Operational plans will be developed to implement those actions necessary to meet the Plan's goals and objectives. Responsibilities and schedules will be established. (3rd Quarter FY 97)
- Baselines for performance measures for each goal will be established (4th Quarter FY 97), and measures will be added or deleted as their relevance is established.
- The New Business Planning Process will be put in place to support the implementation of the programmatic aspects of this Plan. (1st Quarter FY 97)
- Progress in meeting goals and objectives will be formally evaluated every 6 months, and an annual report developed. (1st Quarter FY 98)

Annually: FY 98–2001

- Changes in budget and program environment will be evaluated to determine the currency of this Plan. (Continuous)
- Operational plans will be completed for each fiscal year. (1st Quarter of each fiscal year)
- Employee responses to a Centerwide culture survey will be assessed. (Biannually)
- Progress and review of priorities for continual improvement will be assessed. (Every 6 months with annual report 1st Quarter of following fiscal year)

Resources

NASA Strategic Plan, February 1996

NASA's Strategic Plan for Education,
A Strategy for Change 1993–1998, December 1992

NASA Science Communications Strategy, June 1995

Partners in Education: A Strategy for Integrating Education
and Public Outreach into NASA's Space Science Programs, March 1995

NASA Strategic Management Handbook, October 1996

Mission to Planet Earth Strategic Enterprise Plan, March 1996

Mission to Planet Earth Education Strategy, January 1996

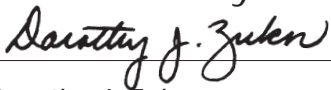
Space Science Enterprise Strategic Plan, August 1995

Goddard Education Strategic Plan, April 1994

Goddard Diversity Management Plan, December 1994



Submitted by:



Dorothy J. Zukor

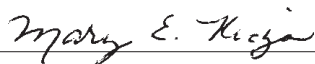
Chair, GSFC's Strategic Planning Team

Endorsed by:



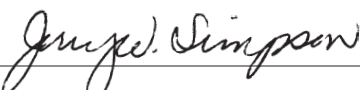
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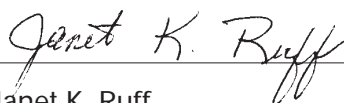
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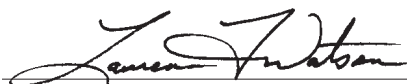
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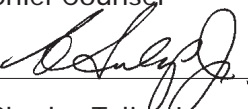
Janet K. Ruff

Chief, Public Affairs



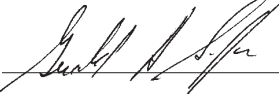
Lawrence F. Watson

Chief Counsel



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Chief Financial Officer



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Sharon C. Foster

Director of Management Operations



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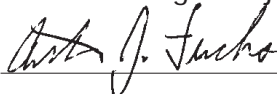
Robert C. Baumann

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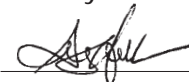
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Arnold L. Torres

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